

**REMARKS**

Claims 1-8 and 10-19 were pending in the subject application, with claim 9 having previously been canceled, without prejudice or disclaimer. By this Amendment, claim 2 has been canceled, without prejudice or disclaimer, and claim 1 has been amended to clarify the claimed subject matter. Accordingly, claims 1, 3-8 and 10-19 are now pending and presented for reconsideration, with claims 1 and 6 being in independent form.

Support for the amendments to claim 1 may be found, inter alia, in the specification at page 7, lines 24-27. Further support for the amendments to claim 1 may be found, inter alia, in claim 2 as originally filed.

Applicant maintains that no new matter is presented by this amendment. Accordingly, Applicant respectfully requests that this Amendment be entered.

**Rejection Under 35 U.S.C. § 102(b)**

On page 2 of the December 15, 2006 Office Action, claims 1-3 and 5 were rejected under 35 U.S.C. § 102(b) as purportedly anticipated by US2001/0056294A1 (Hiramoto et al.).

With regard to claim 1, the Examiner stated that Hiramoto discloses a metal vapor discharge lamp in figure 2 comprising: a refractory and light-transmitting hermetic vessel; a pair of electrode fixed to said hermetic vessel; a discharge medium sealed in the hermetic vessel, the discharge medium containing a halide, a rare gas and substantially disusing mercury; and most of light irradiated from the metal vapor discharge lamp having near-infrared wavelengths (750-1100 nm).

With regard to claim 2, the Examiner stated that Hiramoto discloses the metal vapor discharge lamp according to claim 1, wherein the halide contains a halide of at least one of potassium (K), which radiates light of near-infrared wavelengths (750-1100nm).

With regard to claim 3, the Examiner stated that Hiramoto discloses the metal vapor discharge lamp according to claim 1, further comprising a visible-light blocking filter.

With regard to claim 5, the Examiner stated that Hiramoto discloses the metal vapor discharge lamp according to claim 1, wherein a distance between the pair of electrodes falls within a range of 1 mm to 6 mm (paragraph 82).

Applicant maintains that claim 1 as amended cannot be anticipated by Hiramoto because Hiramoto fails to disclose each and every element of the claimed subject matter.

Hiramoto, as understood by applicant, proposes a discharge lamp for use in photodynamic therapy and photodynamic diagnosis of a cancer, tumor or the like. The discharge lamp proposed by Hiramoto is filled with  $0.1 \mu\text{mol}/\text{cm}^3$  or more of any of the elements selected from the group of lithium (Li), sodium (Na), rubidium (Rb) and potassium (K) as an emitting element, and in addition, at least one or more rare gases selected from the group of neon (Ne), argon (Ar), krypton (Kr) and xenon (Xe).

However, Applicant does not find teaching or suggestion in Hiramoto of a metal vapor discharge lamp comprising a refractory and light-transmitting hermetic vessel, a pair of electrode fixed to said hermetic vessel, and a discharge medium sealed in the

hermetic vessel, the discharge medium containing a halide, a rare gas and substantially disusing mercury, wherein the halide contains a halide of cesium (Cs) which radiates light of near-infrared wavelengths (750-1100 nm), as provided by the subject matter of amended claim 1 of the present application.

Since claim 2 has been canceled hereinabove, the rejection with regard to claim 2 is now moot.

Regarding claims 3 and 5, Applicant respectfully points out that claims 3 and 5 depend on and include all the limitations of claim 1. Thus, claims 3 and 5 are patentable at least for the reasons set forth above with respect to claim 1.

In addition, regarding claim 3, Hiramoto, [0066], proposes use of a filter to cut out light of wavelength greater than 800 nm and light of wavelength less than 600 nm. The medical lamp of Hiramoto utilizes visible light of wavelength in the range of 600nm to 800 nm.

On the other hand, the metal vapor discharge lamp of claim 3 of the present application provides a visible-light blocking filter for cutting out all visible light.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 1-3 and 5 under 35 U.S.C. § 102(b).

**Rejection Under 35 U.S.C. § 103(a)**

On page 3 of the December 15, 2006 Office Action, claims 4, 6-8, and 10-19 were rejected under 35 U.S.C. § 103(a) as allegedly

unpatentable over Hiramoto in view of U.S. Patent No. 6,353,289 (Ishigami '289).

With regard to claim 4, the Examiner acknowledged that Hiramoto does not disclose or suggest that a wattage rating of the metal vapor discharge lamp is 100 W or less.

The Examiner stated that Ishigami '289 is cited to show a metal vapor discharge lamp that has a rate lamp power of at most 100 W. The Examiner further stated that Ishigami '289 teaches that this rate lamp power can help control the lamp voltage.

The Examiner alleged that it would have been obvious to one having skill in the art at the time the invention was made to modify Hiramoto to include wattage rating of the metal vapor discharge lamp is 100 W or less as suggested by Ishigami '289 for controlling the lamp voltage.

With regard to claim 6, the Examiner stated that Hiramoto discloses a metal vapor discharge lamp in figure 2 comprising: a refractory and light-transmitting hermetic vessel; a pair of electrode fixed to said hermetic vessel; a discharge medium sealed in the hermetic vessel, the discharge medium containing a first halide and a rare gas, the first halide containing a halide of at least one of sodium (Na), the discharge medium substantially disusing mercury.

The Examiner acknowledged that Hiramoto does not disclose or suggest a rare earth metal which radiates visible light (380-780 nm) and a ratio of visible-radiation power (30-780 nm) to near-infrared radiation power is output when the metal vapor discharge lamp is in an ON state.

The Examiner stated that Ishigami '289 is cited to show a metal vapor discharge lamp that has a rare earth metal with a halide. The Examiner stated that Ishigami '289 teaches that it is known in the art that the light emission is increased and the arc can be narrowed. The Examiner further stated that since Ishigami '289 uses a halide and a rare earth metal that the ratio would be present. The Examiner also stated that Ishigami '289 discloses that the ratio of emitted visible light to all the visible light emitted for the lamp should be small.

The Examiner alleged that it would have been obvious to one with ordinary skill in the art to modify Hiramoto to include a rare earth metal which radiates visible light (380-780 nm) and a ratio of visible-radiation power (380-780 nm) to near-infrared radiation power (750-1100 nm) falling within a range of 0.5:1 to 4.0:1, the visible-radiation power and the near-infrared radiation power being output when the metal vapor discharge lamp is in an ON state as suggested by Ishigami '289 for increasing light emission and narrowing the arc.

With regard to claim 7, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses the metal vapor discharge lamp according to claim 6, wherein the discharge medium includes: a second halide which generates a relatively high vapor pressure and being a halide of at least one metal which emits a visible light less than that emitted by the metal of the first halide; a third halide of at least one metal which radiates near-infrared light.

With regard to claim 8, the Examiner stated that Hiramoto and Ishigami '289 disclose the metal vapor discharge lamp according

to claim 6, wherein the discharge medium contains a halide of at least one of potassium (K), which radiates light of near-infrared wavelengths (750-1100 nm).

With regard to claim 10, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses the metal vapor discharge lamp according to claim 6, wherein a wattage rating of the metal vapor discharge lamp is 100 W or less.

With regard to claim 11, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses the metal vapor discharge lamp according to claim 6, wherein a distance between the pair of electrodes falls within a range of 1 mm to 6 mm.

With regard to claim 12, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses the metal vapor discharge lamp according to claim 6, wherein the rare gas is Xe, Xe of five atoms or more being sealed in the hermetic vessel.

With regard to claim 13, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses a projector in figure 6 of Ishigami comprising: a reflector; a metal vapor discharge lamp as specified in any one of claims 1 to 12, the metal vapor discharge lamp being provided on the reflector; and a light control member covering a front surface of the reflector.

With regard to claim 14, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses the projector according to claim 13, wherein the projector is installed in a vehicle and used as a headlamp.

With regard to claim 15, the Examiner stated that the combination

of Hiramoto and Ishigami '289 discloses the projector according to claim 13, further comprising visible-light blocking means for blocking visible light and passing near-infrared light therethrough in a high beam mode, and means for removing the visible-light blocking means from a radiation direction of the metal vapor discharge lamp in a low beam mode.

With regard to claim 16, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses the projector according to claim 13, further comprising a visible-light blocking filter provided on at least one of front and rear surfaces of the light control member.

With regard to claim 17, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses the projector according to claim 16, wherein the projector is installed in a vehicle and used as a headlamp.

With regard to claim 18, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses the projector according to claim 17, wherein the visible-light blocking filter blocks visible light and passes near-infrared light therethrough in a high beam mode, and further comprising means for removing the visible-light blocking filter from a radiation direction of the metal vapor discharge lamp in a low beam mode.

With regard to claim 19, the Examiner stated that the combination of Hiramoto and Ishigami '289 discloses a metal vapor discharge lamp lighting device comprising: a metal vapor discharge lamp as specified in any one of claims 1 to 12; and a lighting circuit which supplies a current three times or more a rated lamp current after the metal vapor discharge lamp is lit, and reduces the

current with a lapse of time.

Applicant maintains that Hiramoto and Ishigami '289 do not render obvious the subject matter of the pending claims of the present application. The claims of the present application are patentable over Hiramoto and Ishigami '289 for at least the following reasons.

As pointed out above, Hiramoto does not teach or suggest a metal vapor discharge lamp comprising a refractory and light-transmitting hermetic vessel, a pair of electrode fixed to said hermetic vessel, and a discharge medium sealed in the hermetic vessel, the discharge medium containing a halide, a rare gas and substantially disusing mercury, wherein the halide contains a halide of cesium (Cs) which radiates light of near-infrared wavelengths (750-1100 nm), as provided by the subject matter of amended claim 1 from which claim 4 depends.

Ishigami '289 does not cure the deficiencies of Hiramoto.

As an initial matter, it should be noted that Hiramoto is directed to a medical lamp, and Ishigami '289 is directed to a lighting lamp. Thus, a person skilled in the art would not have looked to combine teachings of the two references, since the two references propose lamps of respective different purposes.

More specifically, Ishigami '289, as previously pointed out in the record, is directed to metal halide discharge lamps for generating visible light.

Although Ishigami '289 mentions that a halide of cesium can be included in the discharge medium, claim 1 of the present



application would not have been obvious even if Hiramoto and Ishigami '289 are combined since neither Hiramoto nor Ishigami '289 teaches or suggests including a halide of cesium (Cs) to radiate light of near-infrared wavelengths (750-1100 nm).

As previously pointed out in the record, Ishigami '289 does not teach or suggest a metal vapor discharge lamp wherein most of the light irradiated from the metal vapor discharge lamp has near-infrared wavelengths (750-1100nm), as provided by the subject matter of claim 1.

Regarding claim 6, as pointed out above, the discharge lamp of Hiramoto utilizes visible light of the wavelength of 600-800 nm as a medical lamp, and therefore of course does not teach or suggest using a visible-light blocking filter for cutting out all visible light, as provided by the subject matter of claim 6 of the present application. Ishigami '289 as pointed out previously is directed to metal halide discharge lamps for generating visible light, and therefore of course, like Hiramoto, does not teach or suggest using a visible-light blocking filter for cutting out all visible light.

In addition, neither Hiramoto nor Ishigami '289 teach or suggest "a ratio of visible-radiation power to near-infrared radiation power falling within a range of 0.5:1 to 4.0:1", as provided by the subject matter of claim 6.

The Office Action states that "Ishigami disclose that the ratio of emitted visible light to all the visible light emitted for the lamp should be small (column 8, line 64 thru column 9, line 4)", based on a misunderstanding that claim 6 of the present application is a lamp to reduce visible light.

However, it should be clear from "a ratio of visible-radiation power to near-infrared radiation power falling within a range of 0.5:1 to 4.0:1" that claim 6 of the present application is not a lamp to reduce light emission of visible light. The lamp of claim 6 can typically be used as a headlamp of a car, and therefore sufficient emission of visible light is necessary.

Regarding claims 7, 8 and 10-19, Applicant respectfully points out that claims 7, 8 and 10-19 depend on and include all the limitations of claim 1 and/or claim 6. Thus, claims 7, 8 and 10-19 are patentable at least for the reasons set forth above with respect to claims 1 and 6.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection of claims 4, 6-8, and 10-19 under 35 U.S.C. § 103.

In view of the amendments to the claims and remarks hereinabove, Applicant maintains that claims 1, 3-8 and 10-19 are now in condition for allowance. Accordingly, Applicant earnestly solicits the allowance of the application.

If a telephone interview would be of assistance in advancing prosecution of the subject application, Applicant's undersigned attorneys invite the Examiner to telephone them at the telephone number provided below.

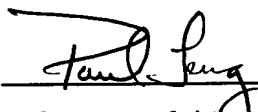
If a petition for an extension of time is required to make this response timely, this paper should be considered to be such a petition.

Toshihiko ISHIGAMI et al.  
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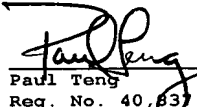
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No fee is deemed necessary in connection with the filing of this Amendment. However, if any fees are required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.	
 Paul Teng Reg. No. 40,837	March 15, 2007 Date